

IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

Claims 1-12 (canceled)

13. (currently amended) A method for β 1,3-N-acetyl-D-glucosaminyltransferase protein having an activity of transferring N-acetyl-D-glucosamine from a donor substrate to an acceptor substrate through β 1,3-linkage, wherein “ β ” represents an anomer assuming a cis configuration, of anomers of glycosidic linkage at position 1 of the sugar ring, the method comprising reacting the donor substrate and the acceptor substrate with a β 1,3-N-acetyl-D-glucosaminyltransferase protein, wherein the protein comprises the following amino acid sequence:

- (A) SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17; or
- (B) SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17 in which one or to 20 amino acid(s) is(are) substituted, deleted, or inserted.

14. (currently amended) An isolated[[The]] glycosyltransferase protein according to Claim 13, wherein the glycosyltransferase protein has at least one of the following properties (a) to (c):

- (a) acceptor substrate specificity: the glycosyltransferase protein has a significant transferring activity for at least Bz- β -lactoside and/or Gal β 1-4GlcNAc groups, wherein “Bz” represents a benzyl group, “Gal” represents a galactose residue, “GlcNAc” represents an N-acetyl-D-glucosamine residue, and “ β ” represents an anomer assuming a cis configuration, of anomers of glycosidic linkage at position 1 of the sugar ring;
- (b) reaction pH: the glycosyltransferase protein has a high activity at or around neutral; or
- (c) divalent ion requirement: the activity is enhanced in the presence of at least Mn^{2+} or Co^{2+} .

15. (currently amended) The ~~method-glycosyltransferase~~ protein according to Claim 13, wherein the ~~glycosyltransferase~~ protein has a significant activity for an acceptor substrate having an N-linked oligosaccharide with four Gal β 1-4GlcNAc groups.

Claims 16-23 (canceled)

24. (new) The method according to Claim 13, wherein the protein has at least one of the following properties (a) to (c):

- (a) acceptor substrate specificity: the protein has a significant transferring activity for at least Bz- β -lactoside and/or Gal β 1-4GlcNAc groups, wherein “Bz” represents a benzyl group, “Gal” represents a galactose residue, “GlcNAc” represents an N-acetyl-D-glucosamine residue, and “ β ” represents an anomer assuming a cis configuration, of anomers of glycosidic linkage at position 1 of the sugar ring;
- (b) reaction pH: the protein has a high activity at or around neutral; or
- (c) divalent ion requirement: the activity is enhanced in the presence of at least Mn²⁺ or Co²⁺.

25. (new) The method according to Claim 13, wherein the protein comprises the amino acid sequence of SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17.

26. (new) The method according to Claim 13, wherein the protein comprises the amino acid sequence of SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17 in which one to 20 amino acid(s) is(are) substituted, deleted, or inserted.

27. (new) The method according to Claim 15, wherein the protein has at least one of the following properties (a) to (c):

- (a) acceptor substrate specificity: the protein has a significant transferring activity for at least Bz- β -lactoside and/or Gal β 1-4GlcNAc groups, wherein “Bz” represents a benzyl group, “Gal” represents a galactose residue, “GlcNAc” represents an N-

acetyl-D-glucosamine residue, and “β” represents an anomer assuming a cis configuration, of anomers of glycosidic linkage at position 1 of the sugar ring;

- (b) reaction pH: the protein has a high activity at or around neutral; or
- (c) divalent ion requirement: the activity is enhanced in the presence of at least Mn^{2+} or Co^{2+} .

28. (new) The method according to Claim 15, wherein the protein comprises the amino acid sequence of SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17.

29. (new) The method according to Claim 15, wherein the protein comprises the amino acid sequence of SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17 in which one to 20 amino acid(s) is(are) substituted, deleted, or inserted.

30. (new) The isolated glycosyltransferase protein according to Claim 14, wherein the glycosyltransferase protein has at least the properties (a) to (c).